



Quick Look Cruise Report

Document No.: 3201-00202

Cruise Name: Global Southern Ocean 2 Deployment		Cruise Plan Doc. No.: 3201-00201	Cruise Plan Rev.: 1-00	Cruise Plan Date: 2015-11-10
Cruise Number: NBP15-11		Cruise Dates: Dec 6, 2015 – Jan 4, 2016		
Cruise Report Reviewed & Approved By				
Chief Scientist (Print Name) Sebastien Bigorre	Signature <i>Sebastien Bigorre</i> (in lieu of signature)	Date 2016-03-09	Project Manager (Print Name) Paul Matthias	Signature <i>Paul Matthias</i> (in lieu of signature)
		Date 2016-03-09		Date 2016-03-09

Cruise Description

Global Southern Ocean 2 was the second deployment of the OOI Southern Ocean Array. Principal objectives were to: 1) deploy the Global Southern Ocean Surface Mooring (GS01SUMO-00002), the Global Southern Ocean Hybrid Profiler Mooring (GS02HYPM-00002), and the Global Southern Ocean Mesoscale Flanking Moorings (GS03FLMA-00002, GS03FLMB-00002), 2) deploy five Global Gliders, 3) recover the four existing moorings (GS01SUMO-00001, GS02HYPM-00001, GS03FLMA-00001, GS03FLMB-00001), 4) recover one existing Global Glider and 5) collect in-situ observations from the ship, including CTD profiles and water samples to assess functionality of the platforms

Issue/Objective	Description	Results	Comments / Corrective Action
CTD Cast #001	CTD cast to test acoustic releases	Successful CTD cast on 8 December 2015. Cast Location: 53° 18.753' S, 80° 17.298' W	Cast to 1500m to test functionality of 3 acoustic releases
CTD Cast #002	CTD cast to calibrate SOCCOM float	Successful CTD cast on 8 December 2015. Cast Location: 53° 18.741' S, 80° 17.310' W	Cast to 2000m in 4300m water depth to calibrate SOCCOM float. Water samples collected for oxygen and salinity
SOCCOM float deployed	Deploy 1 of 3 SOCCOM float	Successful deployment, 8 December 2015, 23:25 UTC	Slightly rough day. Deployment went smoothly.
CTD Cast #003	CTD cast in vicinity of GS01SUMO-00002 site for full bathymetry and to test acoustic releases	Successful CTD cast on 10 December 2015. Cast Location: 54° 24.396' S, 89° 12.138' W	Cast to 4578m (7m off bottom) for a full bathymetric profile and to test the functionality of 3 acoustic releases
CTD Casts #004 & #005	CTD casts to test acoustic releases	Successful CTD cast on 10 December 2015. Cast Location: 54° 21.930' S, 89° 17.866' W	Casts to 1500m to test functionality of 6 acoustic releases
CTD cast #006	CTD cast to calibrate glider 486	Successful CTD cast on 12 December 2015. Cast Location: 52° 56.250' S, 88° 57.379' W	Cast to 1000m to calibrate glider 486. Water samples collected for oxygen, salinity, and nitrate throughout water column; and chlorophyll at the top
Glider 486 Recovery	Open Ocean Glider 486 recovered	Successful recovery on 12 December 2015, 18:35 UTC	Glider 486 from Southern Ocean 1 went off course. Glider light was not one when recovered.
CTD cast #007	CTD cast vicinity of GS02HYPM-00002 site for full bathymetry	Successful CTD cast on 13 December 2015. Cast Location: 54° 28.225' S, 89° 14.428' W	Cast to 4494 m in 4505 m water depth. Confirmed actual water depth for deployment of GS01SUMO-00002.
CTD cast #008	CTD cast vicinity of GS02HYPM-00001 for end-of-deployment validation	Successful CTD cast on 13 December 2015. Cast Location: 54° 31.072' S, 89° 22.222' W	Cast to 4400 m in 4651 m water depth. Water samples collected for salinity and oxygen throughout the water column.
GS01SUMO-00002 Deployment	Deploy Global Southern Ocean Surface Mooring	Successful deployment on 14 December 2015. Anchor drop at 20:20 UTC. Surveyed Anchor Position: 54°24.2446' S, 89°12.4148' W	Calm day. Deployment went smoothly. Failure of bulkhead connector for pump on the 40m PCO2W-C SAMI (s/n: CO128) cracked on internal threads. Moved PCO2W-C (s/n: CO130) to 40m and PCO2W-C (s/n: CO128) to 130m.

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Issue/Objective	Description	Results	Comments / Corrective Action
GS02HYPM-00002 Deployment	Deploy Global Southern Ocean Hybrid Profiler Mooring	Successful deployment on 15 December 2015. Anchor drop at 19:34 UTC. Surveyed Anchor Position: 54° 28.2069'S, 89° 14.3998'W	Calm day. Deployment went smoothly.
CTD Cast #009	CTD cast vicinity of GS03FLMB-00002 site for full bathymetry	Successful CTD cast on 15 December 2015. Cast Location: 54° 05.067' S, 88° 51.626' W	Cast to 4938 m in 4945 m water depth. Water samples collected for salinity, oxygen, and nitrate throughout the water column; and chlorophyll and DIC/TA/pH at the top
GS03FLMB-00002 Deployment	Deploy Global Southern Ocean Flanking Mooring B	Successful deployment on 16 December 2015. Anchor drop at 19:33 UTC. Surveyed Anchor Position: 54° 04.944' S, 88° 51.5429' W	Calm day. Deployment went smoothly.
CTD Cast #010	CTD cast vicinity of GS03FLMA-00002 site for full bathymetry	Successful CTD cast on 17 December 2015. Cast Location: 54° 07.728' S, 89° 33.203' W	Cast to 4695 m in 4711 m water depth. Water samples collected for salinity, oxygen, and nitrate throughout the water column; and chlorophyll and DIC/TA/pH at the top
GS03FLMA-00002 Deployment	Deploy Global Southern Ocean Flanking Mooring A	Successful deployment on 17 December 2015. Anchor drop at 19:42 UTC. Surveyed Anchor Position: 54°07.60018' S, 89 33.167' W	Calm day. Deployment went smoothly.
CTD Cast #011	CTD cast vicinity of GS02FLMA-00001 for end-of-deployment validation	Successful CTD cast on 17 December 2015. Cast Location: 54° 07.011' S, 89° 35.928' W	Cast to 2000m in 4738m water depth. Water samples collected for salinity, oxygen, and nitrate throughout the water column; and chlorophyll and DIC/TA at the top
GS03FLMA-00001 Recovery	Recover Global Southern Ocean Flanking Mooring A deployed in Feb 2015	Successful recovery on 17 December 2015.	Calm day. Recovery went smoothly. Recovered mooring in good condition.
CTD Cast #012	CTD cast vicinity of GS02FLMB-00001 for end-of-deployment validation	Successful CTD cast on 18 December 2015. Cast Location: 54° 04.987' S, 88° 53.476' W	Cast to 2000m in 4943m water depth. Water samples collected for salinity, oxygen, and nitrate throughout the water column; and chlorophyll and DIC/TA at the top
GS03FLMB-00001 Recovery	Recover Global Southern Ocean Flanking Mooring B deployed in Feb 2015	Successful recovery on 19 December 2015.	Recovery postponed for a few hours to wait for weather to subside. Recovery went smoothly. Recovered mooring in good condition.
CTD Cast #013	CTD cast in the vicinity of glider deployment for validation	Successful CTD cast on 20 December 2015. Cast Location: 54° 07.5618' S, 89° 45.0069' W	Cast to 1000 m in 4413 m water depth. Water samples collected for salinity, oxygen, and nitrate throughout the water column; and chlorophyll at the top
Glider 566 Deployment	Global Profiling Glider 566 Deployment	Successful deployment on 20 December 2015, 14:16 local (1716UTC) Deployment Location : 54° 07.5355' S, 89° 45.0518' W	Calm day. Deployment went smoothly using float-release cart.
Glider 565 Deployment	Global Profiling Glider 565 Deployment	Successful deployment on 20 December 2015, 14:46 local (1746UTC) Deployment Location : 54° 07.5112' S, 89° 45.7489' W	Calm day. Glider was lowered too quickly, had to wait for glider to level out before releasing using float-release cart.
Glider 560 Deployment	Open Ocean Glider 560 Deployment	Successful deployment on 20 December 2015, 16:20 local (1920 UTC) Deployment Location : 54° 07.4897' S, 89° 46.5990' W	Calm day. Deployment went smoothly using float-release cart (added weight to the nose of the cart).
Glider 524 Deployment	Open Ocean Glider 524 Deployment	Successful deployment on 20 December 2015, 16:50 local (1950 UTC) Deployment Location : 54° 07.5380' S, 89° 46.7152' W	Calm day. Deployment went smoothly using float-release cart with added weight to the nose of cart.

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Issue/Objective	Description	Results	Comments / Corrective Action
MET Comparison	Ship vs. GS01SUMO-00001 meteorology comparison	21 – 22 December, 2015	(see MET comparison below Figure 2)
CTD Cast #014	CTD cast vicinity of GS01SUMO-00001 for end-of-deployment validation	Successful CTD cast on 24 December 2015. Cast Location: 54° 07.5618' S, 89° 45.0069' W	Cast to 2000m in 4543m water depth. Water samples collected for salinity, oxygen, and nitrate throughout the water column; and chlorophyll, pH, and DIC/TA at the top
GS02HYPM-00001 Recovery	Recover Global Southern Ocean Hybrid Profiler Mooring deployed in Feb 2015	Successful recovery on 25 December 2015	Calm day. Recovery went smoothly. Recovered mooring in good condition.
Glider 565 Recovery and Redeploy	Global Profiling Glider 565 Recovered and Redeployed after ballast adjustment	Successful recovery/redeployment on 25 December 2015, 17:40 local (2040 UTC). Recovery/redeployment Location: 54° 13.764' S, 89° 43.829' W.	Glider 565 was slightly heavy. It was recovered and 3 wing rail weights were removed from each side of the glider (6 weights total). Calm day. Recovery and redeployment went smoothly using small boat.
Glider 561 Deployment	Open Ocean Glider 561 Deployment	Successful deployment on 25 December 2015, 18:41 local (2141 UTC) Deployment Location : 54° 13.554' S, 89° 45.357' W	Calm day. Deployment went smoothly using float-release cart with added weight to the nose of cart.
CTD Cast #015	CTD cast vicinity of GS02HYPM-00002 for validation	Successful CTD cast on 26 December 2015. Cast Location: 54° 26.165' S 89° 14.387' W	Cast to 4573 m in 4572 m water depth. Water samples collected for salinity and oxygen throughout the water column.
MET Comparison	Ship vs. GS01SUMO-00002 meteorology comparison	Overnight 26 – 27 December, 2015	(see MET comparison below Figure 2)
GS01SUMO-00001 Recovery	Recover Global Southern Ocean Surface Mooring, deployed February 2015	Successful recovery on 27 December 2015.	Recovery went smoothly. Recovered mooring in good condition.
MET Comparison	Ship vs. GS01SUMO-00002 meteorology comparison	Overnight 27 – 28 December, 2015	(see MET comparison below Figure 2)
CTD Cast #016	CTD cast vicinity of GS01SUMO-00002 for validation	Successful CTD cast on 28 December 2015. Cast Location: 54° 19.992' S 89° 12.775' W	Cast to 2000 m in 4550 m water depth. Water samples collected for salinity, oxygen, and nitrate throughout the water column; and chlorophyll, pH, and DIC/TA at the top
SOCOM float deployed	Deploy 2 of 3 SOCCOM float	Successful deployment, 28 December 2015, 13:18 UTC	Calm day. Deployment went smoothly.
Repair of GS01SUMO-00002 buoy	Troubleshooting and replacement of Power System Controller	Successful replacement of PSC 28 December 2015	Replaced damaged PSC from GS01SUMO-00002 with PCB from GS01SUMO-00001

Table 1 – Mooring Deployment Locations

Mooring	Deployment Date/Time	Surveyed Position		
		Latitude	Longitude	Depth (m)
GS01SUMO-00002	14 December 2015 17:20 local, 2020 UTC	54° 24.2446' S	89° 12.4148' W	4588
GS02HYPM-00002	15 December 2015 16:34 local, 1934 UTC	54° 28.2069' S	89° 14.3998' W	4515
GS03FLMA-00002	17 December 2015 16:42 local, 1942 UTC	54° 07.538' S	89° 33.176' W	4705
GS03FLMB-00002	16 December 2015 16:33 local, 1933 UTC	54° 04.944' S	88° 51.5429' W	4942

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Table 2 – Acoustic Releases

Acoustic Release Location	Serial Number	Model	Interr. (kHz)	Reply (kHz)	Enable	Disable	Release
GS01SUMO-00002 (Anchor)	50466	Edgetech 8242 XS	11	12	664336	664353	647106
GS01SUMO-00002 (Anchor)	46370	Edgetech 8242 XS	11	12	560320	560345	545377
GS02HYPM-00002 (Upper)	50683	Edgetech 8242 XS	11	12	672560	672602	651735
GS02HYPM-00002 (Anchor)	50680	Edgetech 8242 XS	11	12	672432	672457	651644
GS02HYPM-00002 (Anchor)	50460	Edgetech 8242 XS	11	12	664031	664054	646702
GS03FLMA-00003 (Upper)	48510	Edgetech 8242 XS	11	12	575261	575310	554334
GS03FLMA-00003 (Anchor)	50459	Edgetech 8242 XS	11	12	663776	664012	646673
GS03FLMA-00003 (Anchor)	46276	Edgetech 8242 XS	11	12	555700	555723	544130
GS03FLMB-00003 (Upper)	50673	Edgetech 8242 XS	11	12	672071	672100	651474
GS03FLMB-00003 (Anchor)	50676	Edgetech 8242 XS	11	12	672224	672241	651543
GS03FLMB-00003 (Anchor)	46368	Edgetech 8242 XS	11	12	560234	560251	545331

Table 3 – Glider Deployment Locations

Glider S/N	Glider Type	Deployment Date / Time	Latitude	Longitude	Notes
566	Global Profiling Glider	20 December 2015 14:16 local (1716 UTC)	54° 07.5355' S	89° 45.0518' W	
565	Global Profiling Glider	20 December 2015 14:46 local (1746 UTC)	54° 07.5112' S	89° 45.7489' W	
560	Open Ocean Glider	20 December 2015 16:20 local (1920 UTC)	54° 07.4897' S	89° 46.5990' W	
524	Open Ocean Glider	20 December 2015 16:50 local (1950 UTC)	54° 07.5380' S	89° 46.7152' W	
561	Open Ocean Glider	25 December 2015 18:41 local (2141 UTC)	54° 13.554' S	89° 45.357' W	
565	Global Profiling Glider	25 December 2015 17:40 local (2040 UTC)	54° 13.764' S	89° 43.829' W	3 weights removed from each side Recovered and Redeployed on 25 December
486	Open Ocean Glider	12 December 2015 08:32 local (1132 UTC)	-52 53.386	-89 00.616	Recovered From Southern Ocean - 1

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Table 4 – CTD Casts

Cast #	Date & Time (UTC)	Site & Position	Water Depth (m)	Cast Depth (m)	Water Samples
001	8 Dec 1945	53° 18.753' S 80° 17.298' W	4300	1500	Testing acoustic releases; no samples
002	8 Dec 2136	53° 18.741' S 80° 17.310' W	4300	2000	O2 and salinity
003	10 Dec 1319	54° 24.396' S 89° 12.138' W	4585	4578	Testing acoustic releases & bathymetry; no samples
004	10 Dec 1655	54° 21.930' S 89° 17.866' W	4649	1500	Testing acoustic releases; no samples
005	10 Dec 2108	54° 21.930' S 89° 17.866' W	4656	1500	Testing acoustic releases; no samples
006	12 Dec 1623	Glider recovery 52° 56.250' S 88° 57.379' W	4958	1000	O2, Salt, Nutrient, Chl
007	13 Dec 1147	GS02HYPM-00002 54° 28.225' S 89° 14.428' W	4520	4494	Testing bathymetry; no samples
008	13 Dec 1641	GS02HYPM-00001 54° 31.072' S 89° 22.222' W	4651	4400	O2 and salinity
009	15 Dec 2348	GS03FMLB-00002 54° 05.067' S 88° 51.626' W	4961	4938	O2, pH, DIC/TA, Salt, Nutrient, Chl
010	17 Dec 0041	GS03FMLA-00002 54° 07.728' S 89° 33.203' W	4710	4695	O2, DIC/TA, Salt, Nutrient, Chl
011	17 Dec 2219	GS03FMLA-00001 & GS03FMLA-00002 54° 07.011' S 89° 35.928' W	4739	2000	O2, DIC/TA, Salt, Nutrient, Chl
012	18 Dec 2327	GS03FMLB-00001 & GS03FMLB-00002 54° 04.987' S 88° 53.476' W	4943	2000	O2, DIC/TA, Salt, Nutrient, Chl
013	20 Dec 1548	Glider deployment 54° 07.5618' S 89° 45.0069' W	4413	1000	O2, Salt, Nutrient, Chl
014	24 Dec 1652	GS01SUMO-00001 54° 07.5618' S 89° 45.0069' W	4543	2000	O2, pH, DIC/TA, Salt, Nutrient, Chl
015	26 Dec 1219	GS02HYPM-00002 54° 26.165' S 89° 14.387' W	4572	4573	O2 and salinity
016	28 Dec 11:27	GS01SUMO-00002 54° 19.992' S 89° 12.775' W	4550	2000	O2, pH, DIC/TA, Salt, Nutrient, Chl

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Table 6 - Deployed GS02HYPM-00002 System Status

System	Passed Burn In	Deployed	Validation Data Collected	Passed Validation Check	Comments
Main Controller	Yes	Yes	Yes	Yes	
Acoustic Modem	Yes	Yes	Yes	Yes	
Inductive Modem	Yes	Yes	Yes	Yes	
CTDMO (160m)	Yes	Yes	Yes	Yes	
MMP (170m - 2375m)	Yes	Yes	Yes	Yes	
Inductive Modem	Yes	Yes	Yes	Yes	
CTD	Yes	Yes	Yes	Yes	
ACM	Yes	Yes	Yes	Yes	
FLORT	Yes	Yes	Yes	Yes	
DOSTA	Yes	Yes	Yes	Yes	
MMP (2400m - 4600m)	Yes	Yes	Yes	Yes	
Inductive Modem	Yes	Yes	Yes	Yes	
CTD	Yes	Yes	Yes	Yes	
ACM	Yes	Yes	Yes	Yes	
FLORT	Yes	Yes	Yes	Yes	
DOSTA	Yes	Yes	Yes	Yes	
	100%	100%	100%	100%	

Table 7 - Deployed GS03FLMA-00002 System Status

System	Passed Burn In	Deployed	Validation Data Collected	Passed Validation Check	Comments
Main Controller	Yes	Yes	Yes	Yes	
Acoustic Modem	Yes	Yes	Yes	Yes	
Inductive Modem	Yes	Yes	Yes	Yes	
Secondary Controller	Yes	Yes	Yes	Yes	
Inductive Modem	Yes	Yes	Yes	Yes	
FLORT	Yes	Yes	Yes	Yes	
DOSTA	Yes	Yes	Yes	Yes	
PHSEN	Yes	Yes	Yes	Yes	
CTDMO (30m)	Yes	Yes	Yes	Yes	
CTDMO (40m)	Yes	Yes	Yes	Yes	
CTDMO (60m)	Yes	Yes	Yes	Yes	
CTDMO (80m)	Yes	Yes	Yes	Yes	
CTDMO (120m)	Yes	Yes	Yes	Yes	
CTDMO (180m)	Yes	Yes	Yes	Yes	
CTDMO (250m)	Yes	Yes	Yes	Yes	
CTDMO (350m)	Yes	Yes	Yes	Yes	
CTDMO (500m)	Yes	Yes	Yes	Yes	
CTDMO (750m)	Yes	Yes	Yes	Yes	
CTDMO (1000m)	Yes	Yes	Yes	Yes	
CTDMO (1500m)	Yes	Yes	Yes	Yes	
ADCPS	Yes	Yes	Yes	Yes	
	100%	100%	100%	100%	

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Table 8 - Deployed GS03FLMB-00002 System Status

System	Passed Burn In	Deployed	Validation Data Collected	Passed Validation Check	Comments
Main Controller	Yes	Yes	Yes	Yes	
Acoustic Modem	Yes	Yes	Yes	Yes	
Inductive Modem	Yes	Yes	Yes	Yes	
Secondary Controller	Yes	Yes	Yes	Yes	
Inductive Modem	Yes	Yes	Yes	Yes	
FLORT	Yes	Yes	Yes	Yes	
DOSTA	Yes	Yes	Yes	Yes	
PHSEN	Yes	Yes	Yes	Yes	
CTDMO (30m)	Yes	Yes	Yes	Yes	
CTDMO (40m)	Yes	Yes	Yes	Yes	
CTDMO (60m)	Yes	Yes	Yes	Yes	
CTDMO (80m)	Yes	Yes	Yes	Yes	
CTDMO (120m)	Yes	Yes	Yes	Yes	
CTDMO (180m)	Yes	Yes	Yes	Yes	
CTDMO (250m)	Yes	Yes	Yes	Yes	
CTDMO (350m)	Yes	Yes	Yes	Yes	
CTDMO (500m)	Yes	Yes	Yes	Yes	
CTDMO (750m)	Yes	Yes	Yes	Yes	
CTDMO (1000m)	Yes	Yes	Yes	Yes	
CTDMO (1500m)	Yes	Yes	Yes	Yes	
ADCPS	Yes	Yes	Yes	Yes	
	100%	100%	100%	100%	

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Table 9 - Surface Mooring (GS01SUMO-00001) Data Download Summary

Platform Location	Instrument	Data Downloaded From	Notes
SCIENCE DATA			
Halo	METBK 1	DCL	30.6 MB on DCL (191 log files)
Halo	METBK 2	DCL	46.5 MB on DCL (299 log files)
Halo	SPKIR	DCL	219 MMB on DCL (40 log files)
Buoy	WAVSS	DCL and Instrument	180 MB on DCL (264 log files) and *** MB on Instrument
Bottom of Buoy	PCO2A	DCL	8.99 MB on DCL (270 log files)
Bottom of Buoy	DOSTA	DCL	153 MB on DCL (190 log files)
Bottom of Buoy	FLORT	DCL	270 MB on DCL (296 log files)
Bottom of Buoy	NUTNR	DCL and Instrument	37.3 MB on DCL (189 log files) and 111 MB on Instrument (531 data files)
Bottom of Buoy	OPTAA	DCL	740 MB on DCL (6,663 log files)
NSIF	NUTNR	DCL and Instrument	73.0 MB on DCL (265 log files) and 81.9 MB on Instrument (327 data files)
NSIF	SPKIR	DCL	114 MB on DCL (265 log files) Potential issue with DCL data
NSIF	CTDBP	DCL and Instrument	92.9 MB on DCL (132 log files) and 2.25 MB on instrument (2 files)
NSIF	VELPT	DCL and Instrument	805 MB on DCL, No data from instrument.
NSIF	OPTAA	DCL	337 MB on DCL (3,305 log files)
NSIF	PCO2W	DCL	345 KB on DCL (155 log files) 668 KB on Instrument (1 data files)
NSIF	DOSTA	DCL	112 MB on DCL (155 log files)
NSIF	FLORT	DCL	136 MB on DCL (155 log files)
Inductive Wire	CTDMO-Q (20)	DCL and Instrument	3.66 MB on DCL (3,079 log files) and 1.63 MB HEX file on Instrument
Inductive Wire	PHSEN-E (20)	DCL and Instrument	1756 KB From Instrument No DCL Data
Inductive Wire	CTDMO-Q (40)	DCL and Instrument	2.01 MB on DCL (3,706 log files) and 1.89 MB HEX file on Instrument
Inductive Wire	PCO2W-C (40)	DCL and Instrument	37 KB From Instrument No DCL Data
Inductive Wire	CTDMO-Q (60)	DCL and Instrument	2.00 MB on DCL (3,706 log files) and 1.89 MB HEX file on Instrument
Inductive Wire	CTDMO-Q (100)	DCL and Instrument	3.66 MB on DCL (3,760 log files) and 1.9 MB HEX file on Instrument
Inductive Wire	PHSEN-E (100)	DCL and Instrument	941 MB on DCL (3,617 log files) and 83.6 KB on instrument (1 files)
Inductive Wire	CTDMO-Q (130)	DCL and Instrument	5.61 MB on DCL (3,704 log files) and 1.84 MB HEX file on Instrument

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Platform Location	Instrument	Data Downloaded From	Notes
Inductive Wire	PCO2W-C (130)	DCL and Instrument	366 KB From Instrument No DCL Data
Inductive Wire	CTDMO-Q (180)	DCL and Instrument	2.00 MB on DCL (3,704 log files) and 1.89 MB HEX file on Instrument
Inductive Wire	CTDMO-Q (250)	DCL and Instrument	2.00 MB on DCL (3,704 log files) and 1.89 MB HEX file on Instrument
Inductive Wire	CTDMO-Q (350)	DCL and Instrument	2.00 MB on DCL (3,704 log files) and 1.89 MB HEX file on Instrument
Inductive Wire	CTDMO-Q (500)	DCL and Instrument	2.00 MB on DCL (3,699 log files) and 1.89 MB HEX file on Instrument
Inductive Wire	ADCPS-N (500)	DCL and Instrument	9.16 MB on DCL (217 files) 8.619 MB on Instrument (.000 files)
Inductive Wire	CTDMO-R (750)	DCL and Instrument	5.63 MB on DCL (3,740 log files) and 1.89 MB HEX file on Instrument
Inductive Wire	CTDMO-R (1000)	DCL and Instrument	5.70 MB on DCL (3,699 log files) and 1.89 MB HEX file on Instrument
Inductive Wire	CTDMO-R (1500)	DCL and Instrument	5.70 MB on DCL (3,695 log files) and 1.89 MB HEX file on Instrument
ENGINEERING DATA			
Buoy	CPM1	CPM	1.033 GB on CGN Data Folder
Buoy	DCL 11	DCL	166 MB SYSLOG
Buoy	DCL 12	DCL	269 MB SYSLOG
NSIF	DCL 16	DCL	196 MB SYSLOG

Table 10 – Recovered Profiler Mooring Data Download Summary

Platform Location	Instrument	Data Downloaded From	FLMA Notes
SCIENCE DATA			
64" Sphere	CTDMO-G	Instrument	993 MB HEX file on CTD
Inductive Wire	GWFP (170m - 2375m)	Profiler (upper)	331 A, C, E M files
Inductive Wire	GWFP (2400m - 4600m)	Profiler (lower)	371 A, C, E M files
ENGINEERING DATA			
Controller	MSIOC	Controller	1 DAT file

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Table 11 – Recovered Flanking Mooring Data Download Summary

Platform Location	Instrument	Data Downloaded From	FLMA Notes	FLMB Notes
SCIENCE DATA				
64" Sphere	FLORT	Controller	3.4 MB (270 files)	2.3 MB (184 Files)
64" Sphere	DOSTA	Controller	3.4 MB (270 files)	2.3 MB (184 Files)
64" Sphere	PHSEN	Instrument	2 MB on Instrument (1 files)	2 MB on Instrument (1 files)
64" Sphere	CTDMO-G (30)	Instrument	990 KB on HEX file from instrument	991 KB on HEX file from instrument
Inductive Wire	CTDMO-G (40)	Instrument	995 KB on HEX file from instrument	997 KB on HEX file from instrument
Inductive Wire	CTDMO-G (60)	Instrument	991 KB on HEX file from instrument	997 KB on HEX file from instrument
Inductive Wire	CTDMO-G (90)	Instrument	995 KB on HEX file from instrument	997 KB on HEX file from instrument
Inductive Wire	CTDMO-G (130)	Instrument	995 KB on HEX file from instrument	995 KB on HEX file from instrument
Inductive Wire	CTDMO-G (180)	Instrument	994 KB on HEX file from instrument	995 KB on HEX file from instrument
Inductive Wire	CTDMO-G (250)	Instrument	994 KB on HEX file from instrument	997 KB on HEX file from instrument
Inductive Wire	CTDMO-G (350)	Instrument	995 KB on HEX file from instrument	995 KB on HEX file from instrument
Inductive Wire	CTDMO-G (500)	Instrument	995 KB on HEX file from instrument	995 KB on HEX file from instrument
62" Sphere	ADCPS-L (500)	Instrument	10.5 MB on instrument (.000 file)	9.4 MB on instrument (.000 file)
Inductive Wire	CTDMO-H (750)	Instrument	995 KB on HEX file from instrument	996 KB on HEX file from instrument
Inductive Wire	CTDMO-H (1000)	Instrument	995 KB on HEX file from instrument	998 KB on HEX file from instrument
Inductive Wire	CTDMO-H (1500)	Instrument	996 KB on HEX file from instrument	998 KB on HEX file from instrument
ENGINEERING DATA				
Controller	MSIOC	Controller	15.8 MB (1,204 items)	16.2 MB (1,226 items)
Controller	SSIOC	Controller	10.2 MB (1,094 items)	11.5 MB (775 items)

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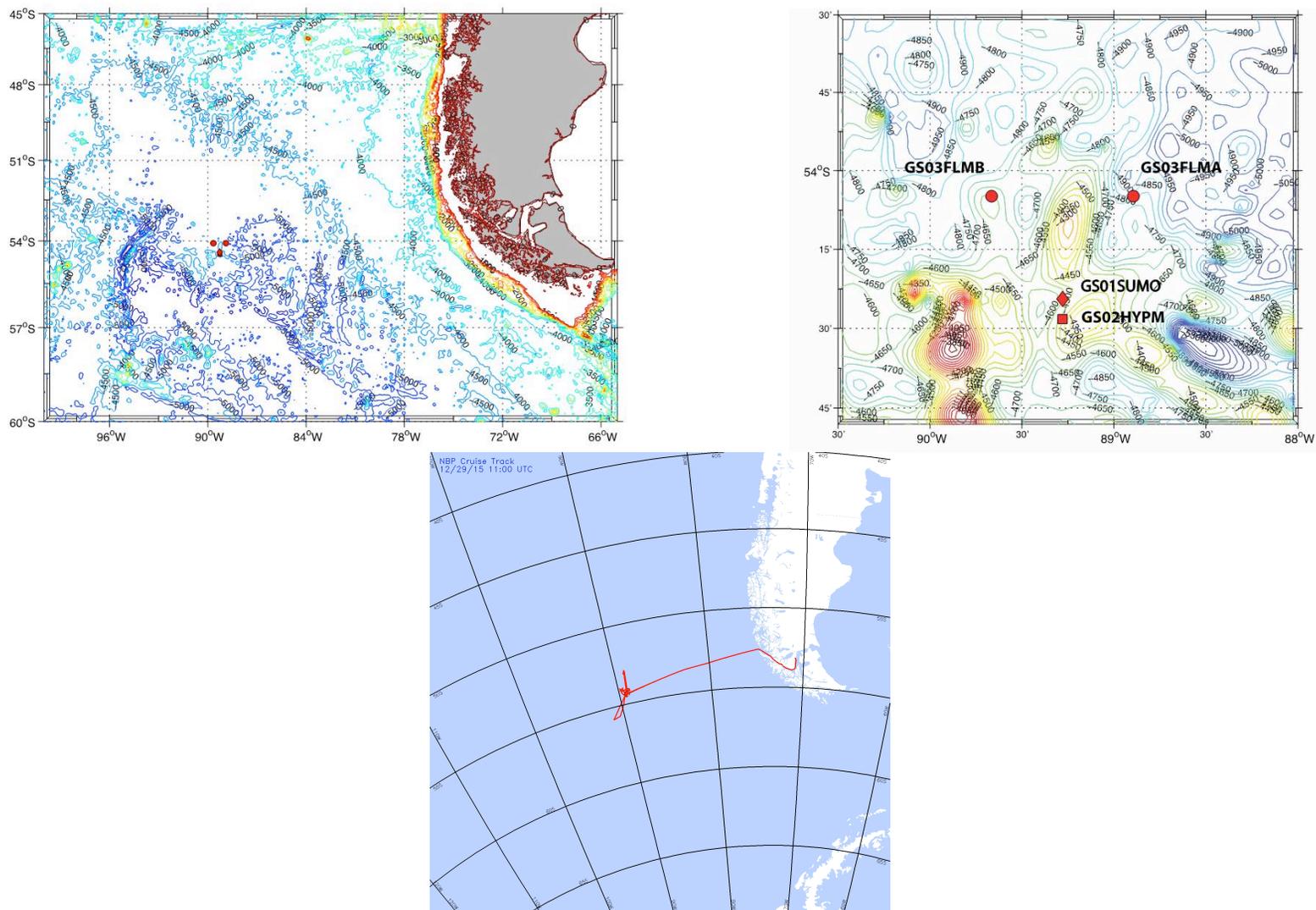


Figure 1 – Location of Southern Ocean Array off the southwest coast of Chile (left); Configuration of Southern Ocean Array (center); Cruise track including transit from Punta Arenas, Chile to the Southern Ocean Array site(right)

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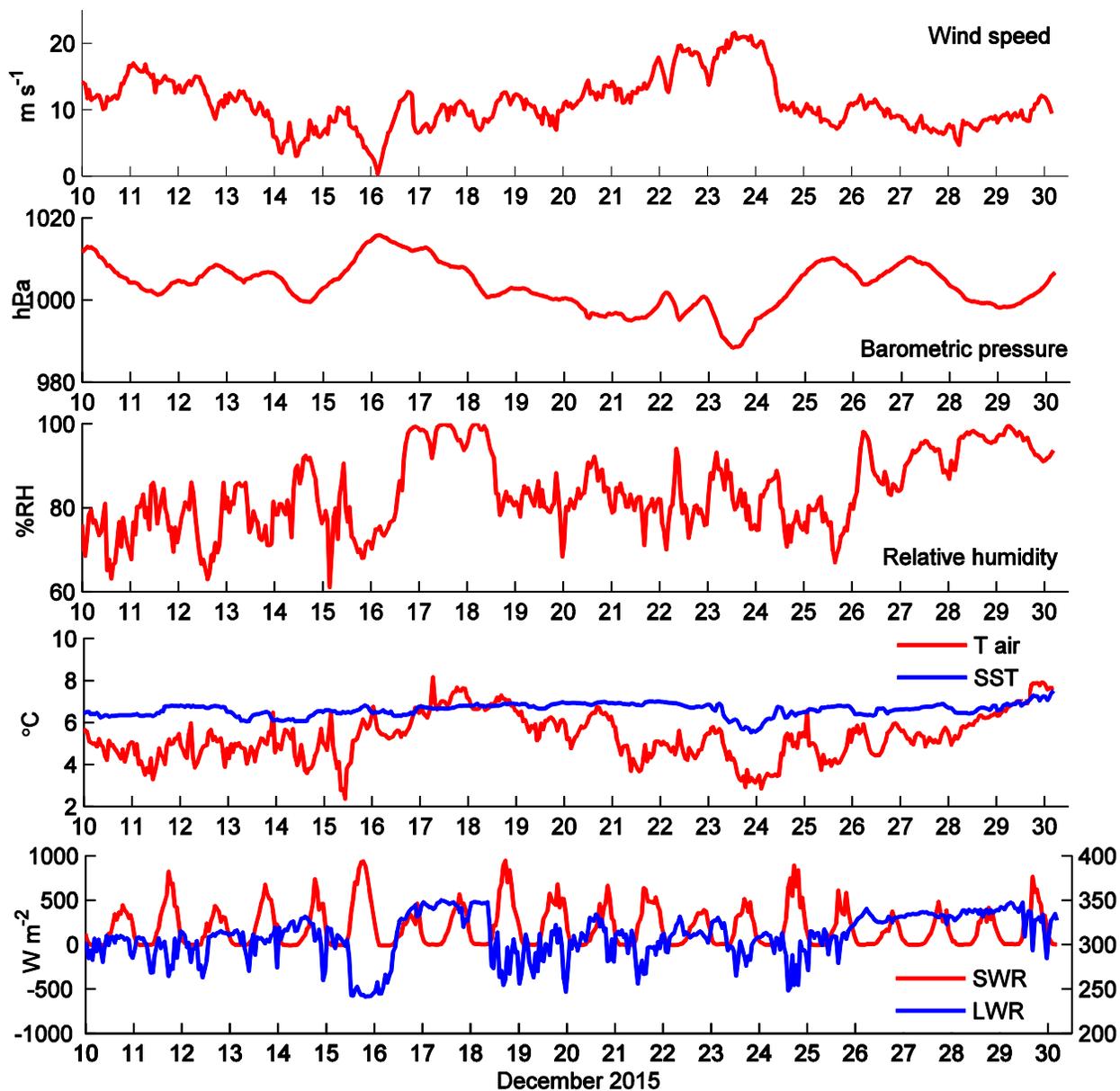


Figure 2 – Time series of R/V *Palmer* surface meteorology from underway data files; sensors on the meteorological mast and in the thermosalinograph.

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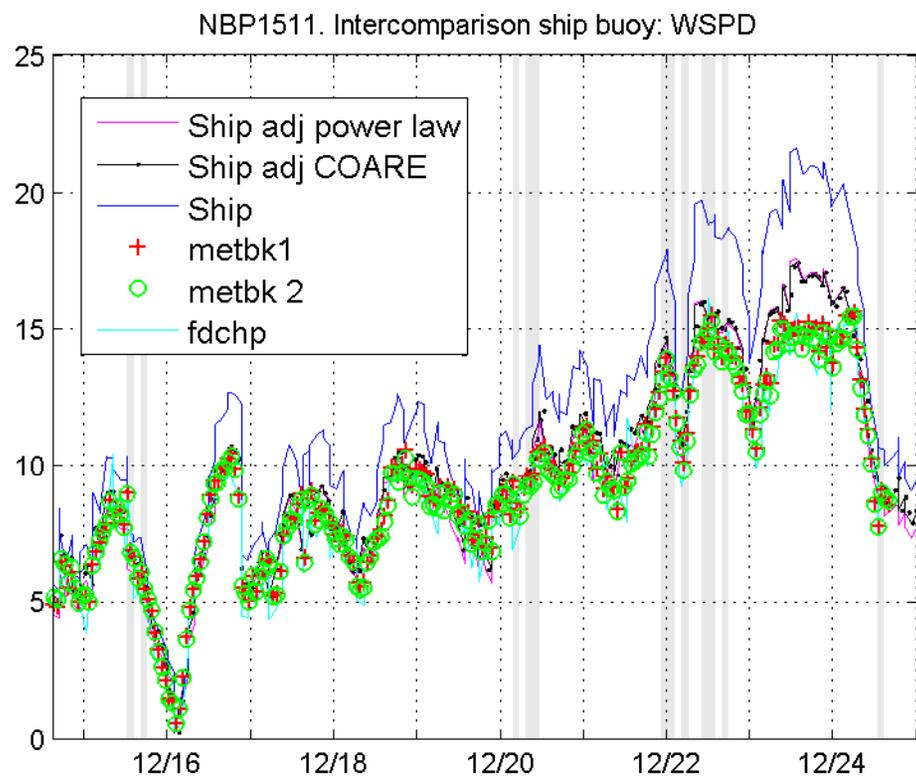


Figure 3 – Comparison of Wind Speed Data (m/s) from Ship, and METBKs and FDCHP on GS01SUMO-00002. METBKs & FDCHP compare well to ship-adjusted data

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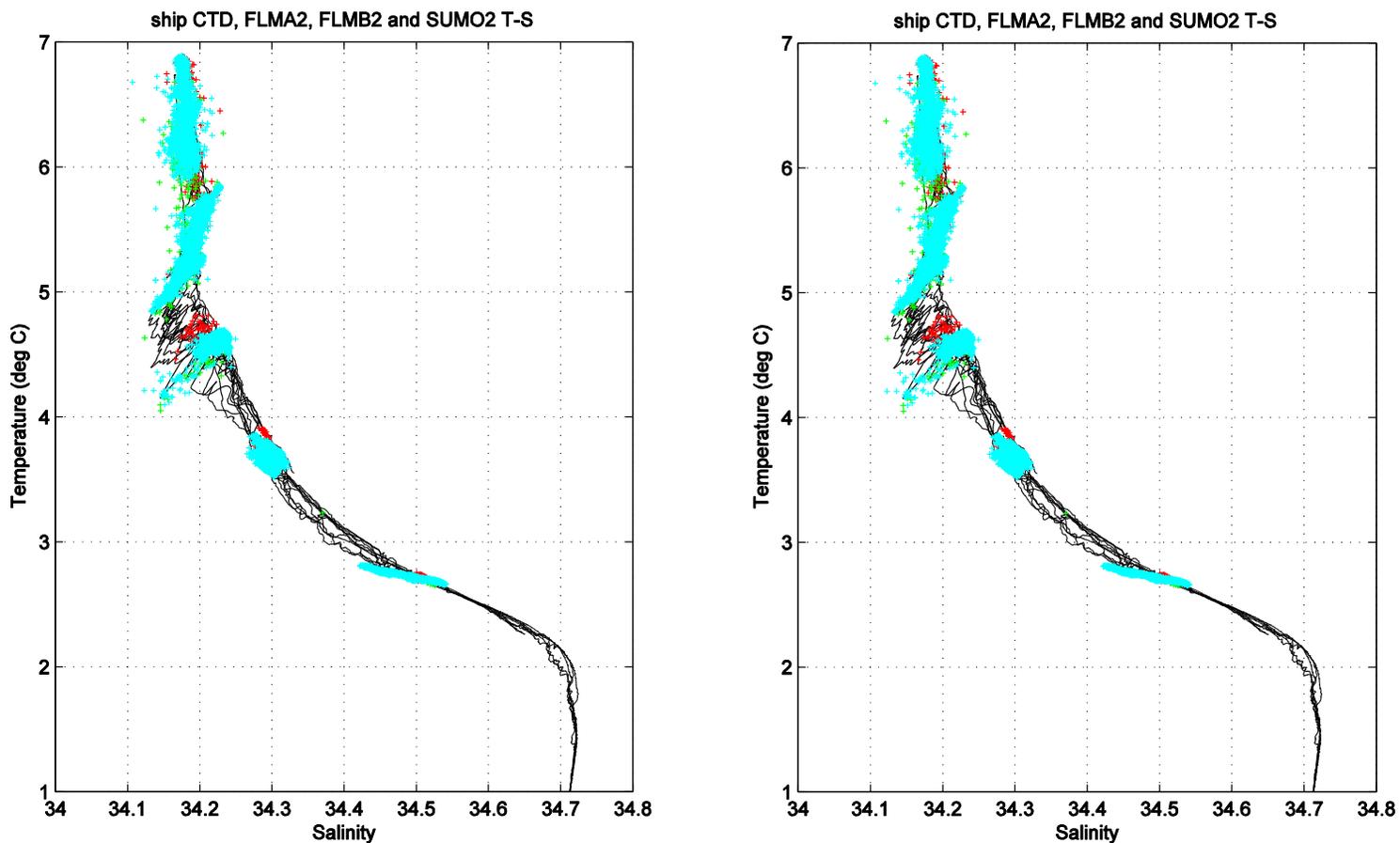


Figure 4 – Comparison of CTD data from Ship (black lines), GS01SUMO-00002 (cyan dots), GS03FLMA-00002 (red dots) and GS03FLMB-00002 (green) dots; shows good agreement.

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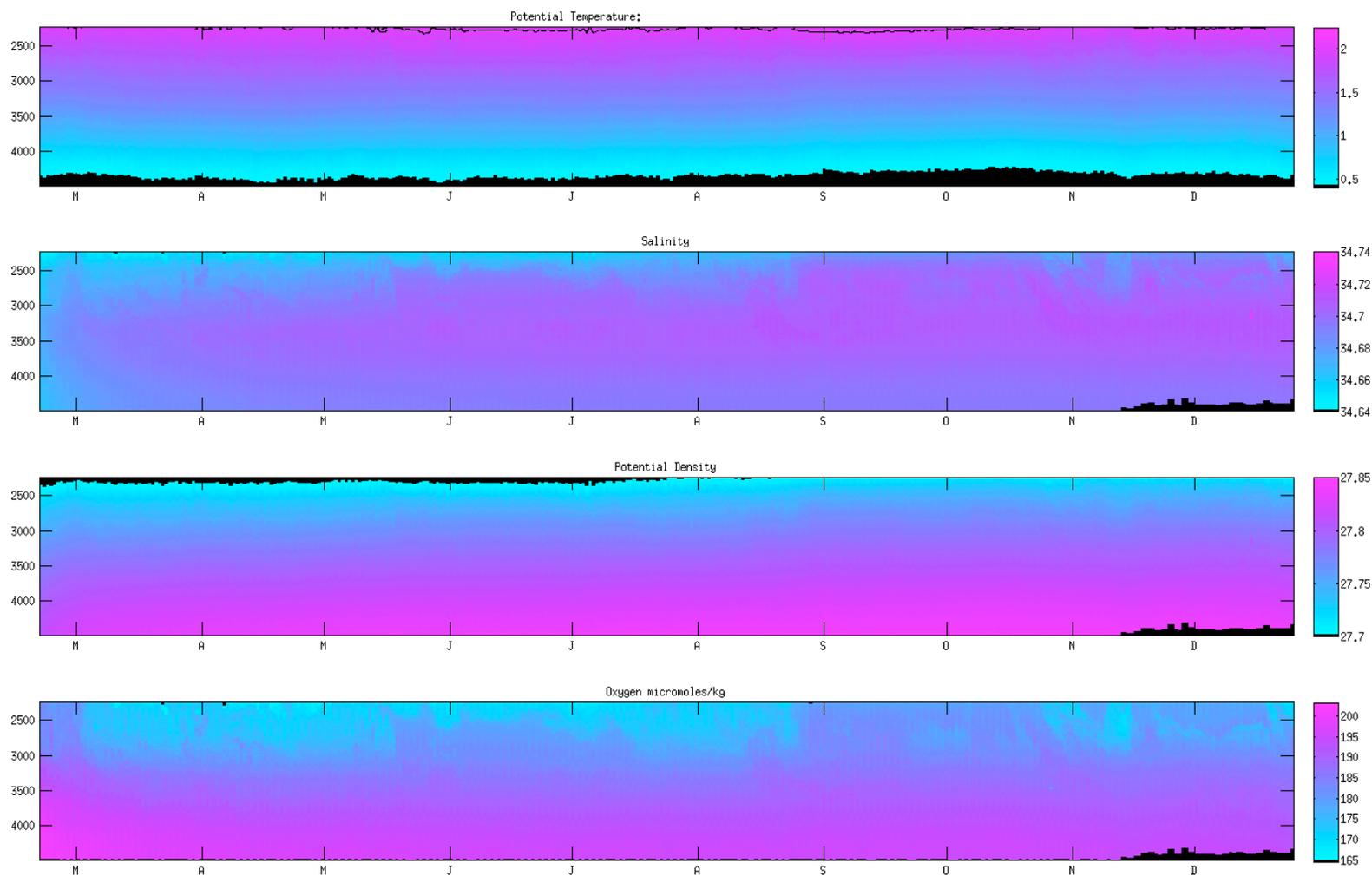


Figure 5 – Year-long Profiler Data Set from bottom profiler of GS02HYPM-00001 Deployment